UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,296	11/26/2003	Yong Min Ha	8733.948.00-US	5489

30827 7590 06/13/2007

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER	
NGUYEN, JIMMY H	
ART UNIT	**PAPER NUMBER**
2629	
MAIL DATE	**DELIVERY MODE**
06/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,296	HA ET AL.	
	Examiner	Art Unit	
	Jimmy H. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,12,13,19 and 29* is/are rejected.

7)☒ Claim(s) *7-11,14-18,20-28 and 30-33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 04/04/2007. Claims 1-4 and 6-33 are currently pending in the application. An action follows below:

Claim Objections

2. Claim 29 is objected to under 37 CFR 1.75(a) because although this claim meets the requirement 112/2d, i.e., the metes and bounds are determinable, however, the following changes should be made:

"**device,**" in line 1 should be changed to -- **device** -- in order to clearly define a plurality of switching blocks included in the LCD device; and

"**1**" in line 4 should be changed to -- **1,** -- due to a grammatical error.

3. It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-4, 6, 12, 13, 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Figs. 1-10 and the corresponding description, of the pending application) hereinafter AAPA, and further in view of Sato et al. (US 6,628,261 B1), hereinafter Sato.

As to claim 1, AAPA discloses a liquid crystal display (LCD) device (see Fig. 1) comprising an LCD panel (10, see Fig. 1) having a plurality of data lines (DL, Fig. 1); a control chip (22) (see Fig. 1); a sampling switch array (14) coupled to the data lines (DL) and the control chip (22), wherein the control chip applies video signals to the data lines via a plurality of data supply lines (PD) and the sampling switch array; and a switch controller (24) coupled to the sampling switch array and the control chip, wherein the switch controller alternately applies a first turn on pulse (TP) having a first absolute value (Vl) on a control signal (C1) (see waveform C1 in Fig. 3) and a second turn on pulse (TP) having a second absolute value (Vl) on a control signal (C2) (see waveform C2 in Fig. 3); see Fig. 3, paragraphs 0013 and 0016). Accordingly, AAPA discloses all the claimed limitations of claim 1 except that the switch controller alternately applies turn on pulses to the sampling switch array, in accordance with the control signals from the control chip, instead of a polarity of the video signals from the control chip, as presently recited in claim 1.

However, Sato discloses a related LCD device comprising a switch controller (a circuit including elements 240, 250, 260, 270, as shown in Fig. 1) receiving sampling video signals (VSP1, VSP2) and polarity control signals (FLP1, FLP2) (see Figs. 1 and 5) and controlling a sampling switch array (an array including switches 280 and 290, see Figs. 1 and 5) in accordance with of a polarity of the video signals (VSP1, VSP2) (see col. 7, line 54 through col. 9, line 33). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the switch controller of AAPA so that the switch controller is capable of controlling the sampling switch array in accordance with of a polarity of the video signals, in view of the teaching in the Sato reference, because this would lengthen the drive time of the

signal (data) line, thereby reducing the area occupied by the switches for controlling the signal line, as taught by Sato (see col. 9, lines 24-33).

As to claim 2, AAPA discloses the control chip including a plurality of data supply lines (PD) transmitting m number of video signals to the sampling switch array, wherein m is an even integer greater than 1 (see Fig. 1, paragraph 0013).

As to claim 3, AAPA discloses the sampling switch array including a plurality of switching blocks (29, 30, ..., see Fig. 2) connected to a corresponding one of the plurality of data supply lines (PD), wherein each of the switching blocks includes m number of switching devices, and wherein the each of the switching devices divides the m number of video signals and applies the divided video signals to the plurality of data lines (see Fig. 3, paragraphs 0014 and 0015).

As to claim 4, AAPA discloses the switch controller sequentially turning the switching devices on and the video signals applied to the switching devices that are turned on (see paragraphs 0016-0018).

As to claim 6, AAPA discloses the switching devices comprising PMOS transistors (S1, S2 ... Sm; see Figs. 2 and 9; paragraph [0027]) and Sato discloses the switching controller applying the first turn-on pulse to the switching devices upon receipt of a video signal having a positive polarity and applying the second turn-on pulse to the switching devices upon receipt of a video signal having a negative polarity (see col. 7, line 54 through col. 9, line 33). Accordingly, AAPA in view of Sato discloses all limitations of this claim.

As to claim 12, AAPA discloses the switch controller (24) mounted directly on the LCD panel (10) (see last two lines of paragraph 0010).

As to claim 13, AAPA discloses the switch controller mounted on the PCB 20 (see Fig. 1, lines 4-5 of paragraph 0010).

As to claim 19, AAPA discloses the switching devices comprising NMOS transistors (see Fig. 10; paragraph [0031]) and Sato discloses the switching controller applying the first turn-on pulse to the switching devices upon receipt of a video signal having a positive polarity and applying the second turn-on pulse to the switching devices upon receipt of a video signal having a negative polarity.

As to claim 29, since this claim similarly recites all limitations of claim 3 except for a method claim, claim 29 is therefore rejected for the same reason set forth in claim 3 above.

Allowable Subject Matter

6. Claims 7-11, 14-18, 20-28 and 30-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the claimed invention is directed to a LCD device and a method of driving a LCD device. Dependent **claims 7 and 30** identify the uniquely distinct feature, "an absolute value of the third voltage value of the second turn-on pulse is **greater** than an absolute voltage value of the second voltage value of the first turn-on pulse". Dependent **claims 20 and 32** identify the uniquely distinct feature, "an absolute value of the third voltage value of the second turn-on pulse is **less** than an absolute voltage value of the second voltage value of the first turn-on pulse". The closest prior arts, AAPA and Sato both discussed above and further disclosing an absolute value of the third voltage value of the second turn-on pulse **equal to** an absolute voltage value of the second

voltage value of the first turn-on pulse (see Figs. 9-10 of AAPA and Fig. 2 of Sato, either singularly or in combination, fails to anticipate or render the above underlined limitations obvious.

Response to Arguments

8. With respect to the rejection under 35 USC 112, first paragraph, to claim 2-33 in the Office action dated 1/5/2007, Applicants' arguments, see pages 10-11 of the amendment filed on 4/4/07, have been fully considered and are persuasive in light of the amendment to claims 2 and 29 and the cancellation of claim 5. These rejections have been withdrawn.

9. Applicants' argument, "**AAPA and Sato singly or in combination do not teach to have different absolute values**", see the amendment filed on 4/4/07, pages 11-12, specifically page 11, fourth paragraph, with respect to the newly amended claim 1, has been fully considered but it is not persuasive because claim 1 does not recite a first absolute value different from a second absolute value, as argued by Applicants.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
May 31, 2007

Jimmy H. Nguyen
Primary Examiner
Technology Division: 2629